

OXYTROPIS CAMPESTRIS IN NORTHEASTERN
AMERICA.

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FOR many years the handsome *Oxytropis*, which in June colors, with its rosy flowers, miles of gravelly shore along the upper St. John river, has been poorly understood by American systematists. This is due, in part, to the fact that the plant is scarcely known to the botanists of northeastern America except from the too little visited St. John valley, and from the region about Quebec ; and, in part, because those to whom the plant has been familiar have hardly realized the necessity of securing for study more complete material than is found in our herbaria.

During the past June it was the rare fortune of the author to spend some days in the St. John valley ; and there, upon the gravelly delta formed at Fort Kent, at the junction of the Fish river with the St. John, was found this *Oxytropis* in the height of its season, with beautiful fresh rose-colored flowers, older faded bluish ones, and fairly developed pods on the same plant. Most of the plants bore about a score of spikes upon peduncles varying from 2 to 4 dm. in height ; but plants with as many as sixty spikes were not exceptional.

This species was first reported, apparently, in Hooker's *Flora Boreali-Americana* where he treats Canadian specimens (from *Lady Dalhousie*, *Mrs. Percival*, and *Mrs. Shepard*) — presumably from Isle d'Orleans near Quebec — as a form of *O. Lamberti* (*O. Lamberti* a¹), stating that they closely resembled standard figures of that species. In 1838, Torrey and Gray treated the Quebec plant (from *Mrs. Percival*) likewise as a form of *O. Lamberti*, though with some apparent hesitation (*O. Lamberti* δ? ²).

The St. John river plant, seemingly identical with that collected on Isle d'Orleans by Mrs. Shepard, Professor Brunet and others, was first detected during the survey of the "wild lands" of Maine, by Professor Goodale. Specimens of the fruiting plant were sent to Dr. Gray who wrote, "This seems to be near *O. Lamberti*, var. d., *Tor. and Gray*. However, I have a fancy that it may be *O. Uralensis*." ³ Later the plant was said to agree "pretty well with *O. Uralensis*, *L.*, var. b," ⁴ an arctic plant.

¹ Hook. *Fl. Bor.-Am.* i. 147.

² Torr. & Gr. *Fl.* i. 339.

³ Goodale in *Prelim. Rep. Nat. Hist. & Geol. Me.* (1861), 366.

⁴ Goodale, *l. c.* (1862) 125.

In his early treatment¹ of the genus, however, Dr. Gray placed the St. John valley plant, as well as Labrador specimens, under the European *O. campestris*, DC., with "flores lutescentes, violaceo suffusi vel picti, rarius caerulei"; but, as Professor Goodale's specimens were in over-ripe fruit, the description of the flowers (so far, at least, as the Maine plant was concerned) was doubtless based upon the common yellow *O. campestris* of Europe. In reality, the flowers of specimens from the region whence Professor Goodale brought his fruiting plants are, as stated, bright rose-colored (the color of *Hedysarum boreale* or nearly that of *Desmodium canadense*), but in the dried specimens they fade to blue. Though he here referred the Maine plant to De Candolle's species Dr. Gray noted a slight difference, in the legumes, between the Maine specimens and those from Europe.

In his later treatment of the group, however, in 1884, the Maine and Quebec plants, and likewise those from Labrador, were referred by Dr. Gray² to *O. campestris*, DC., var. *caerulea*, Koch, it being stated that the corollas are generally blue, or blue and white, as in that European form. In the Labrador plant, nevertheless, Dr. Gray found the "slight introflexion of the dorsal suture" which he had previously noted in European specimens, but had found wanting in those from Maine.³ Under the name *O. campestris*, DC., var. *caerulea* the Maine and Labrador plants were taken up by Dr. Watson in the sixth edition of the Manual; but, in the Illustrated Flora, Professor Britton has united all the Maine (and with it New Brunswick) Quebec and Labrador material as *O. campestris*, DC. (*Spiesia campestris*, Kuntze), giving the colors "white, yellowish white, or blue," as in the two European forms.

Color alone is an unsafe criterion for the distinction of species, or even varieties, especially in such a group as *Oxytropis*; but to one familiar with European figures of the yellow-flowered *O. campestris* there is little in the rose-colored flowers of the St. John valley plant to suggest specific identity. In size, too, the Maine plant so far exceeds European specimens of either *O. campestris* or its variety *caerulea*, that one hesitates at first sight to place the plants together. The Maine plant is so tall that, in 1893, after being compared with authentic specimens of *O. campestris* (at most 2 dm. high, with fruiting spikes 4 or 5 cm. long) and its smaller variety *caerulea*, the St. John river plant (4 to 5 dm. tall, with fruiting spikes 10 to 12 cm. long) was

¹ Gray, Proc. Am. Acad. vi. 235. ² Proc. Amer. Acad. xx. 6. ³ l. c. vi. 236.

identified, with slight hesitation, with large specimens of the western *O. Lamberti*, Pursh, var. *sericea*, Gray.

Hundreds of specimens recently collected or examined in the St. John and Aroostook valleys show conclusively, however, that the large eastern plant cannot be referred to any form of *O. Lamberti*. In its longer thin slightly silky or glabrate leaves, closely flowered spikes, and especially in the thin papery texture of the legumes, the northeastern plant is well distinguished from the more western species with its thickish densely silvery-silky leaves, loosely-flowered spikes, and firm coriaceous legumes. In fact, the leaves and dense spikes, though large, are not unlike the general type found in the forms of *O. campestris*; and in their thin papery texture the legumes are certainly very like that species, with which for some years it has generally been associated. That it is, however, neither the true *O. campestris* nor its var. *caerulea* has already been sufficiently emphasized. Apparently no other form has been described which includes this attractive plant, and little hesitation is felt in proposing for it a new varietal name by which it may hereafter be distinguished from the overcrowded forms with which it has been confused.

Although this large plant of the St. Lawrence and St. John valleys is clearly different from *Oxytropis campestris* and its variety *caerulea*, its confusion with the latter form has been a natural one, for the larger plant has been represented in our herbaria only by scanty fruiting material. As already stated, however, Dr. Gray, in commenting upon the American plants, noted a slight difference between the legumes of the Maine specimens and those from Europe; and later he found in the Labrador specimens the same "slight introflexion of the dorsal suture" which he had already mentioned in the European plant. Notwithstanding this slight difference in the legumes, Dr. Gray then treated the Maine and Labrador plants as one form. The more southern rosy-flowered plant has been already sufficiently discussed. Judging from descriptions, the Labrador plant, on the other hand, referred by him to *O. campestris*, var. *caerulea*, does not differ appreciably from that European variety.

The two northeastern forms may be characterized as follows: —

OXYTROPIS CAMPESTRIS, DC., var. CAERULEA, Koch. Perennial from a stout multicapital caudex: leaves 3 to 15 cm. long; the 15 to 23 thin more or less sericeous or glabrate elliptic-oblong to linear-lanceolate leaflets generally 1 cm. (rarely 13 mm.) or less long: peduncles .5 to

2 dm. high, with appressed or slightly spreading pale and slightly nigrescent pubescence: spike short, subcapitate, with 3 to 10 blue or blue and white flowers: calyx with nigrescent hairs amongst the subappressed paler ones: legume of thin papery texture, oblong or ovoid, long-acuminate, 15 to 18 mm. long, with appressed nigrescent and pale hairs; the dorsal suture with a slight intrusion. — Synop. 181; Gray, Proc. Am. Acad. xx. 6, as to Labrador plant; Wats. & Coult. in Gray, Man. ed. 6, 137, in part. *O. campestris*, Gray, Proc. Am. Acad. vi. 235, in part, not DC. *Spiesia campestris*, Britton & Brown, Ill. Fl. ii. 308, as to Labrador and Hudson bay plant, not Kuntze. — In America known only from Labrador and the region of Hudson strait: barren hilltop, Square Island, Labrador, Aug. 16, 1882 (*F. A. Allen*, no. 37); Red Bay, July 12, 1891, Battle Harbor, July 18, 1891, Indian Harbor, Hamilton Inlet, August 2, 1891 (*Bowdoin College Exped.* nos. 23, 91, 178); Nain, August 11, 1897, Rama, August 20–24, 1897 (*J. D. Sornborger*, nos. 33, 34); Cape Chudleigh, August 5, 1884 (*R. Bell*); Ungava Bay, 1884 (*L. M. Turner*); Fort Chimo, September, 1896 (*A. P. Low* in Herb. Geol. Surv. Can. no. 16,300).

Var. **Johannensis**. Much larger throughout: leaves in well developed plants 2 dm. (becoming nearly 3 dm.) long; leaflets mostly larger, in maturity 2 or 3 cm. long: peduncles abundant (occasionally as many as 60), 1.5 to 3.5 dm long: spikes with about 12 rose-colored (rarely white) flowers, drying bluish; in fruit becoming 5 to 12 cm. long: legumes 2 to 2.5 cm. long, with a less apparent internal projection of the dorsal suture. — *O. Lamberti* α , Hook. Fl. Bor.-Am. i. 147 (excluding cited figures). *O. Lamberti* δ ?, Torr. & Gray, Fl. i. 339; Gray, acc. to Goodale in Prelim. Rep. Nat. Hist. & Geol. Me. (1861) 366. *O. Lamberti*, var. *sericea*, Fernald in Hay, Bull. Nat. Hist. Soc. N. B. xii. 69 & Proc. Portl. Soc. Nat. Hist. ii. 79; not Gray. *O. Uralensis* β , Gray, acc. to Goodale, l. c. (1862) 125, not Torr. & Gray. *O. campestris*, Gray, Proc. Am. Acad. vi. 235, as to Maine plant & Man. ed. 5, 133, not DC. *O. campestris*, var. *caerulea*, Gray, Proc. Am. Acad. xx. 6, in part (Northern Maine & Lower Canada); Wats. & Coult. in Gray, Man. ed. 6, 137, in part; not Koch. *Spiesia campestris*, Britton & Brown, Ill. Fl. ii. 308, in part (Quebec, Maine and New Brunswick), not Kuntze. — A handsome plant, flowering in June and early July, often abundant on the gravelly river-beaches of the St. John and its tributaries in northern Maine and New Brunswick; also on the Restigouche, and long known from the St. Lawrence valley near Quebec. Specimens examined: Isle d'Orleans, below Quebec (*Mrs. Shepard, Prof. Brunet*); on the St. John near Seven Islands, Maine, 1861 (*G. L. Goodale*); Fort Kent, Maine, 1881 (*Kate Furbish*); in great abundance on the Fish River delta, Fort Kent, June 15, 1898 (*M. L. Fernald*, no. 2289); Grand Isle, Maine, June 20, 1898 (*M. L. Fernald*, no. 2290); Van Buren, Maine, July 21, 1893 (*M. L. Fernald*, no. 25); by the Aroostook river, Caribou, 1880 (*Kate Fur-*

bish); mouth of Madawaska river, New Brunswick, July 13, 1879 (*G. U. Hay & G. F. Matthew*); crevices of ledges, Aroostook Falls, New Brunswick, July, 1893 (*M. L. Fernald*); rocky banks, Hero's Rapids, Restigouche river, New Brunswick, August 2, 1896 (*G. U. Hay*).

NEWLY-OBSERVED PLANT STATIONS IN EASTERN MASSACHUSETTS. — During the past season I have found the following interesting plants in Eastern Massachusetts: —

COLUTEA ARBORESCENS, L. This I found near the roadside in Arlington, not far from the Winchester line. I also found some of it in a vacant lot on Boylston Street, Boston, where it had probably escaped from cultivation in the Back Bay Fens.

JUNCUS DICHOTOMUS, Ell. This grows abundantly in a swamp near the railway at East Lexington. Its range in Gray's Manual is "low sandy grounds, N. J. to Florida"; and, so far as I know, it has been found but once north of these limits. Then it was collected by M. L. Fernald at Orono, Me.

LYTHRUM ALATUM, Pursh. I found this in limited quantity in the same swamp at East Lexington.

EUPHORBIA COROLLATA, L. This grows on the embankment of the Boston aqueduct at South Natick, where it is probably an introduced plant. — C. H. KNOWLTON.

SOME NOTEWORTHY SPECIMENS OF THE FRINGED GENTIAN. — The description in the January RHODORA of a prolific gentian (*G. crinita*, Froel.) recalls several extraordinary specimens of the same species which I have seen. One of these, found isolated in a large pasture near Hartford, was 28½ inches high, and had the symmetrical shape of a small cypress tree. It bore 76 buds and flowers; but although it was allowed to go to seed, no gentians appeared in this pasture for the next three years. The largest gentian which I have ever seen was found at North Bloomfield, Conn., by Mr. C. H. Pember; and although less symmetrical than the one just mentioned, it had no less than 176 buds and flowers. This specimen, which was 38 inches high and 7 inches in diameter, was exhibited at the Botanical Section of the Hartford Scientific Society. Another noteworthy specimen of the same species, found at Glastonbury, Conn., by Mr. A. W. Driggs, bore 124 buds and flowers.